

# ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH  
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

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Dear Sir:

Bids have been asked for production planning for the new Ionizing Radiation Center of the U. S. Army to be located at Sharpe General Depot, Lathrop, Calif. Bid invitation was issued by Army Quartermaster Research & Development Command, Natick, Mass., with closing date July 22. As now planned, the Center will have a peak radiation processing capacity of 1,000 tons of food a month. (Other BIDS ASKED, CONTRACTS AWARDED, p. 5 this LETTER.)

Large uranium deposits, said to be the most extensive in Asia, have been reported discovered in Razasthan Province, North West India. The deposits are 30 miles south west of Jaipur, in the Bhilwana.

Accelerated tax write-off has now been approved by ODM for the new nuclear research center at Quehanna, Pa., of Curtiss-Wright Corp. The write-off was in the amount of \$2,911,000 at 80%.....Mutual Security loan of \$850,000 to Government of Chile has been approved by International Cooperation Administration. Funds will be used to equip seven university scientific laboratories, including nuclear facilities, and to set up a central scientific library to serve these seven universities. (Other FINANCIAL NEWS, p. 2 this LETTER.)

Exchanges of information between U. S. and British authorities on nuclear propelled submarines took place last fortnight during visit to Britain of R/Adm. H. G. Rickover, R/Adm. A. M. Morgan, and Mr. I. H. Mandil, all of whom have been intimately connected with the U. S. nuclear submarine propulsion program. The group held discussions with British Admiralty and U. K. Atomic Energy Authority people, covering certain heretofore undisclosed successful details of U. S. approaches to nuclear submarine propulsion. The engineering involved in the U. K. project to construct nuclear propulsion machinery for submarines was also covered in these discussions, which were the first held under an agreement reached nearly a year ago for cooperation in the nuclear submarine field. (It is believed that information on Britain's Calder Hall nuclear power plant will shortly be forthcoming, although its release to the USAEC was deemed in the U. K. as disadvantageous to British industry. Reason is that the USAEC releases information cost-free to U. S. industry, while U. K. Atomic Energy Authority requires British industry to pay royalties for its application.)

Special steel with neutron absorbing properties has been developed by Hadfields, Ltd., Sheffield, England, annual company meeting was recently told by Lord Dudley Gordon, chairman of Hadfields. The steel was supplied by Hadfields to the Calder Hall nuclear power station. (Other PRODUCTS & MATERIALS, p.3 this LETTER.)

First commercial primary uranium processing plant in the eastern U. S. will be operated by Vitro Rare Metals Co. at Canonsburg, Pa., upon completion this August of a \$2 million expansion program the company now has underway there. New rare metal scrap recovery facility will also be operated at Canonsburg by Vitro, under this expansion program. Heading Vitro Rare Metals (division of Vitro Corp. of America) will be H. F. van der Laan, recently elected president. (Other BUSINESS NEWS, p. 2).

ATOMIC ENERGY BUSINESS NEWS...

NUCLEAR POWER PLANT STUDY IS SCHEDULED:- Nuclear power plant for generation of electricity is now to be developed by Carolinas-Virginia Nuclear Power Associates, Inc., a group of four Southern utilities, and Westinghouse Electric Corp. Engineers from the utility group, and Westinghouse engineers, will make a preliminary study to determine reactor type best suited for the project. On completion of this study, the group plans to negotiate a reactor development contract under terms of the USAEC's reactor program. Making up Carolinas-Virginia are Duke Power Co., S. Carolina Electric & Gas Co., Virginia Electric & Power Co., and Carolina Power & Light Co.

BOILING WATER REACTOR TO BE USED IN PROPOSED PLANT:- Proposition to build a nuclear power plant using advanced boiling water reactor technology has been made to the USAEC by Northern States Power Co., Minneapolis. (This is second proposal in response to USAEC's offer of Jan. 7, 1957 under which financial and other assistance will be granted nuclear power plants embodying such design concepts as in this proposal. First was made by Florida Nuclear Power Group; this LETTER, Vol. 17, No. 8, p.2.) The Northern States plant would use boiling water reactor of advanced design fueled with slightly enriched uranium and having large-volume controlled recirculation of the water coolant-moderator. Separate conventional oil-fired superheater would raise the temperature of the reactor-produced steam. With an electrical capacity of 68,000 KW, preliminary estimates of building costs for the plant are \$21 million. With USAEC bearing part of research and development costs, and waiving fuel charges for five years after start-up, balance of cost of research and development would be borne by Northern States Power and other members of Central Utilities Atomic Power Associates, an organization of 11 utility companies interested in the venture. Allis-Chalmers Manufacturing Co., Milwaukee, is prime contractor to build the plant; architect-engineer is Pioneer Service & Engineering Co., Chicago.

PROPOSAL MADE BY U.S. FIRM TO BUILD NUCLEAR POWER PLANT IN JAPAN:- Proposal has been made by General Electric Co. (U.S.) to the Japanese Atomic Energy Commission and interested Japanese utilities to build a 186,000 electrical KW nuclear power plant in Japan. The plant would use a dual-cycle boiling water type reactor, similar to the 180,000 electrical KW Dresden plant which GE is building for Commonwealth Edison Co. of Chicago. Much of the equipment and accessories would be produced in Japan under technical agreements now being negotiated by GE with Japanese industrial firms. (Chairman Koichi Uda of the Japan Atomic Energy Commission plans visits to the U. S., Britain and Canada this Summer; subsequent visits of technical missions from Japan to these countries will follow. Decisions on whether U. S. or U. K. nuclear power approaches will be adopted will be made after these visits. Actively concerned with the decisions is the Japanese Federation of Electric Power Companies whose nine utility members are planning to form this Fall a joint stock company known as Atomic Energy Generation & Development Co., Ltd. Stated purpose is to import power reactors, conduct research, and wholesale nuclear-produced power. Some 75% of all electricity generated in Japan is produced by the nine members of this Federation.)

FINANCIAL NEWS IN NUCLEAR FIELD:- Changes in stockholdings recently made by officers and directors of listed firms in the nuclear field included sale by Kennard H. Morgenstern, executive vice president, Nuclear Corp. of America, of 800 Class A shares reducing his direct holdings to 31,000; and sale by J. N. V. Duncan, director, Northspan Uranium Mines, Ltd., of 20,000 common shares, reducing his direct holdings to 4,000.....Review titled Blue Chips in Uranium Mines, covering U. S. and Canadian listed uranium shares of conservative appeal, appears in Investor's Reader dated May 29, 1957 issued by Marrill Lynch, Pierce, Fenner & Beane, 70 Pine St., New York 5. ....Science & Nuclear Fund, Philadelphia, has filed registration statement with SEC for issuance of 33,000 shares of \$1 par common stock.....Recent annual meeting in Brussels of Union Miniere du Haut-Katanga was told that its subsidiary Societe Generale Metallurgique de Hoboken is prepared to produce uranium metal and oxide (for use in nuclear reactors) from its uranium ores. Union Miniere, which for years has supplied U. S. and Britain with large quantities of uranium concentrates, said it is continuing such exportation "in conformity with existing agreements", and also is prospecting for uranium ores in new areas of the Congo.

NEW DIVISION SET UP BY INDUSTRIAL FIRM:- Advanced Products division is a new department set up by ACF Industries, Inc., New York, in which manufacture of products for nuclear energy, petroleum, gas and chemical industries will be concentrated. R. Furrer, ACF vice-president for manufacturing, will be president of the new division.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant...

PRODUCTS FROM THE MANUFACTURERS:- Nuclear powered fixed interval time delay, trade-named Betachron, is said to have shelf and use life of 25 years. Its self contained nuclear power source, consisting of a nuclear battery with associated circuitry, provides an electrical time delay ranging from milliseconds to forty hours with what is said to be an accuracy of plus-or-minus 3% over a temperature range of minus 65-deg. F., to plus 165-deg. F.--Patterson, Moos div., Universal Winding Co., Jamaica 18, L.I., New York.

MANUFACTURERS' NEWS:- Universal Atomics Corp., which recently became Universal Transistor Products Corp., retaining an Atomics division, is now occupying new and larger (12,500 sq. ft.) plant in Westbury, L.I., New York. Expansion of the company's business, from annual gross of \$50,000 in 1955 when it started, to an anticipated \$2 million this year, mostly along the lines of transistorized power supplies, prompted the expansion. Its Atomics division produces ratemeters, dosimeters, etc., and through low cost construction has been low bidder on recent Federal Civil Defense Administration requests for quotations on both dosimeter pens and dosimeter chargers.

New organization, Ayling Nuclear Equipment Co., has been formed in England by Ayling Industries Group, Horsham, Sussex, to produce remote handling equipment for radioactive materials. The group was recently awarded running contract for some £30,000 from the Atomic Energy Research Establishment, Harwell, for a further year's experimental prototype and assembly work. (Another company of the Ayling group, H. & E. Lintott, Ltd., produces glove boxes for handling radioactive materials, manufacturing to Harwell specifications.)

Borden Co., Philadelphia, Pa., has recently been granted \$38,950 USAEC contract to do research in the field of radiation instrumentation. Work concerns a proposal for plastic scintillators.

General Electric Co.'s Pinellas Peninsula Plant, which the firm recently completed (between St. Petersburg and Clearwater, Fla.) is being purchased by the USAEC. Commission said it will take up purchase option on this \$6 million plant which was built to produce electronic equipment for the USAEC. Output goes to Sandia Corp., Albuquerque, N.M., the Western Electric Co. subsidiary which handles development of nuclear weapons. GE will continue as contract operator of the Pinellas plant.

Production schedule of two per month is now being maintained by Aerojet-General Nucleonics on its 100-milliwatt model AGN-201 nuclear research reactor. Firm said order backlog was "substantial", with bookings on hand from universities, medical institutions, and industrial concerns.

MANUFACTURERS' EQUIPMENT SALES:- Two million volt X-ray machine has been shipped by High Voltage Engineering Corp., Burlington, Mass., to Western General Hospital, Edinburgh, Scotland. Machine will be used in cancer therapy. Sale was to South Eastern Regional Hospital Board, Scotland, which has jurisdiction over Western General.

Swaging machines for use in nuclear energy applications have recently been supplied by Fenn Manufacturing Co., Newington, Conn., to General Electric's Hanford Atomic Products Operation, Richland, Wash.; to Union Carbide Nuclear Corp., Oak Ridge, Tenn.; and to Babcock & Wilcox nuclear facility, Lynchburg, Va. Fenn is a leading supplier of metal forming equipment in the nuclear energy field.

PRODUCT NOTES:- Prediction that future consumption of pure niobium metal in the U. S. will run between 10,000 and 60,000 pounds a year (depending on USAEC experimental results) was made by R. L. Carmichael, of Battelle Memorial Institute, who recently took part in the Niobium Symposium at the Washington, D.C., meeting of the Electrochemical Society. First purchase of pure niobium metal was made by USAEC in August, 1955, when it bought 350-lbs. at \$98/lb. Further purchases, made in 1955 and 1956, indicate use of the metal to date in reactor development approaches some 20,000-lbs. For 1957, USAEC contracts call for 7500-lbs. from Kennametal Corp. at \$67.25/lb., and 7500-lbs. from Wah Chang Corp. at \$54.70/lb. (Niobium has been found very suitable for cladding cores of fast reactors, since it is stable and effective in preventing fission products from entering the system. It is said to be superior to zirconium, molybdenum, and vanadium in resisting heat and corrosion.)

Zirconium metal, of nuclear purity, is now offered commercially by the German chemical engineering company, Degussa. The firm also offers arc furnaces for the smelting of zirconium, canned fuel elements for gas-cooled and water-cooled nuclear reactors, and pure uranium and equipment for the reduction of uranium ores.



ATOMIC ENERGY LEGAL NEWS...

HEAVY WATER PATENT CASE APPEALED:- U.S. Court of Appeals has now agreed to decide (upon basis of secret briefs) whether the USAEC should be enjoined from publishing details of process for making heavy water until the inventor, J.S. Spevack, New Rochelle, N. Y., can apply for foreign patents. Lower court had rendered adverse decision. Inventor had claimed that USAEC revelation of patent details would prejudice obtaining foreign patent rights. (U.S. patent law provides that the inventor, rather than first person filing, is entitled to patent; laws of other countries permit first person filing to obtain patent. If case is decided in Mr. Spevack's favor, he may file abroad nonexclusively on his invention, assigned to the USAEC; this is in line with Atomic Energy Act of 1954 and current USAEC policy.)

LAWSUITS FILED AGAINST USAEC:- Lawsuits in connection with accidents occurring during Sylvania Electric Products, Inc. USAEC contract work were recently filed against the Commission. One suit for \$700,000, filed by Mrs. J.A. Blaber, concerns death of her husband, a research engineer, who died of burns suffered during thorium dust explosion at the Sylvania-operated metallurgy laboratory in Bayside, L.I., New York, last July. Other suit, for \$250,000, was filed by G.S. Caloumenou, who worked as laboratory assistant at Sylvania's Hicksville, L.I., laboratory. Complaint covers injuries Mr. Caloumenou said he suffered in connection with a sodium hydroxide-water explosion in 1955, at the laboratory.

DISABILITY CLAIM REJECTED FOR RADIATION INJURY:- Claim for alleged disability due to ionizing radiation exposure, made by maintenance machinist at the USAEC's Fernald, Ohio, installation, has now been denied by Workmen's Compensation Bureau of Ohio. Claimant stated he was exposed to excessive radiation while repairing thorium pots that had not been properly decontaminated. However, the person's individual radiation exposure record showed that radiation received had been substantially less than tolerance levels of National Bureau of Standards.

EXPORT & CONSTRUCTION PERMITS & LICENSES...

EXPORT LICENSES:- Intercontinental Chemical Corp., New York, has received USAEC export license to ship solution type research reactor to Farbwerke Hoechst AG, Frankfurt/Main, Germany. Reactor, of 50-KW power level, is to be constructed by Atomics International division of North American Aviation, Inc. Value of shipment is declared at \$245,000.

LICENSE AMENDMENT:- Amended license is to be issued by USAEC to Aerojet-General Nucleonics, to permit the firm to transfer research reactor from the company's San Ramon, Calif., plant to Oklahoma State Fair Grounds for exhibit at the Semi-Centennial Exposition at Oklahoma City June 19-23.

LICENSE REQUESTS:- AMF Atomics, New York, has requested export licenses from the USAEC to ship research reactors to Hamilton College, McMaster University, Hamilton, Canada, and to Greek Atomic Energy Commission, Athens.

CONSTRUCTION PERMITS:- USAEC proposes to issue permit to General Dynamics Corp., for construction near San Diego, Calif., of an experimental nuclear facility and a series of initial uranium foil experiments.

Notice of proposed issue of permit to Curtiss Wright Corp. has been posted by the USAEC for construction by CW of a pool-type research reactor at Quehanna, Pa. Reactor is to be housed in the radioactive materials laboratory building on the company's 51,000-acre tract.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Radioisotopes; New Tool for Industry, by Sidney Jefferson. An industrial guide. 160-pages.-- George Newnes, Ltd., London, England. (£1 14s)

Uranium Prospecting, by D.W. Swanson, W. Van der Ley. Searching for uranium in the U.S. 200 pages.--Vantage Press, Inc., 120 W. 31st St., New York 1 (\$4.00)

Defense Against Radioactive Fallout on the Farm. Farmers Bulletin no. 2107. -U. S. Department of Agriculture, Washington 25, D.C. (free)

Hearings before Joint Committee on Atomic Energy on Development, Growth & State of Atomic Energy Industry. In two volumes. 791 pages.-- Superintendent of Documents, Washington 25, D.C. (Vol. I, \$1.25; Vol. II, \$1.00)

NOTES:- An extensive bibliography on the subject of radiation damage to electronic components has been prepared by nuclear engineering division of Penn-Texas Corp., 730 Fifth Ave., New York, and is available from the division for the nominal charge of \$1.00.

### BIDS ASKED, CONTRACTS LET...

BIDS ASKED:- Bids have been asked by the USAEC, Grand Junction, Colo., with closing date July 5, for quantity of fused vanadium pentoxide which has been declared surplus. Average offering price will be about \$1.22-per lb., FOB Grand Junction, Colo.

CONTRACTS AWARDED:- Contract has been received by Penn-Texas Corp., New York, from USAEC, for development of powder metallurgical process for fabrication of fuel elements for nuclear reactors. Hallicrafters Co., Chicago, and Pratt & Whitney Co., W. Hartford, subsidiaries of Penn-Texas, will work on the project in collaboration with Powder Metallurgy Laboratories of Stevens Institute of Technology, Hoboken, N.J.

Contract has been signed by Babcock & Wilcox Co., New York, with Danish Atomic Energy Commission, to make nuclear fuel elements for a tank-type research reactor the Commission is now building in Denmark. Some 45 fuel element assemblies will be furnished under this contract, fabricated from uranium enriched to 20% in uranium-235, maximum enrichment permitted by law.

Following recent award of contracts, work has started on new office and laboratory buildings in Grand Junction, Colo. for Union Carbide Nuclear Co. General contractor is R.W. Mier Construction Co., Denver. The new \$500,000 construction will permit moving carbide research and development activities from Rifle, Colo., where they are now located.

### RESEARCH & DEVELOPMENT NEWS...in the nuclear field...

APPROPRIATIONS MADE FOR FLORIDA RESEARCH:- Florida state legislature has appropriated \$5.2 million for nuclear research and development at three state universities. For the College of Engineering of the University of Florida \$2.8 million were allocated; for Florida State University \$2.3 million were granted; and for Florida A&M University \$65,000 was allocated.

UNIVERSITIES & HOSPITALS RECEIVE USAEC RESEARCH CONTRACTS:- Some 46 research contracts in the fields of medicine, biology, biophysics, radiation instrumentation, and special training have now been renewed and 9 new ones granted by the USAEC, for universities and hospitals in the U. S. Largest was to Western Reserve University for studies of biological effects of internally deposited radioisotopes and related studies; USAEC grant was for \$252,500 to cover this study.

RESEARCH INITIATED UNDER U.S. AIR FORCE CONTRACT:- Research to evaluate radiation effects for their promise in gamma ray dosimetry is now being done at Battelle Memorial Institute, Columbus, Ohio, under contract with Wright Air Development Center, Dayton, Ohio. Objectives are to investigate those effects of gamma radiation which can serve as methods for measuring high radiation doses, in the range from one hundred thousand to ten billion roentgens.

NEW SECTION ESTABLISHED:- Neutron Physics section, which has been established in the Atomic and Radiation Physics Division of the National Bureau of Standards, will have as a major interest the field of basic neutron penetration experiments. New section will also maintain neutron standards including neutron source standards and standards of neutron flux and dose.

HEAVY WATER EXPERIMENTAL PLANT OPERATING IN JAPAN:- Heavy water pilot unit at the Showa Denko fertilizer plant, Kawasaki, Japan, is now producing experimental quantities of heavy water. Design of this three-stage experimental unit producing 50 kg. per year was done by engineers of Showa Denko and Hitachi, Ltd., and Tokyo University and Tokyo Institute of Technology professors. While this pilot unit is tied in with an electrolysis unit used for ammonium sulfate production at the main Showa Denko plant, it is hoped to ultimately construct a 10-ton per year heavy water producer that can operate independently, and be adequate to the needs of future Japanese nuclear reactors.

NEW LABORATORIES FOR NUCLEAR RESEARCH:- Large and fully equipped radiation research laboratory is to be added to The Texas Co.'s research center at Beacon, N.Y. Construction is to start immediately; completion is scheduled for April, 1958. Equipment will include a 6-MEV linear accelerator, a 3-MEV Van de Graaff accelerator, and a 35,000-curie cobalt-60 gamma radiation source. The cobalt-60 source, one of the largest of its kind, has been under irradiation for three years at the Chalk River, Ontario, NRX reactor.

Sincerely,

The Staff,  
ATOMIC ENERGY NEWSLETTER

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